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**METHOD AND SYSTEM FOR MANAGING PROCESSOR EXECUTION
TIME UTILIZING VARIABLE FREQUENCY SWITCHING**

ABSTRACT OF THE DISCLOSURE

The present invention includes a method for managing processor execution time in a motor controller. The method includes receiving motor speed data, comparing the received motor speed data to predetermined motor speed ranges, determining a motor speed range based on the comparison, and modulating an inverter switching frequency of the motor controller processor based on the motor speed range. The step of receiving motor speed data may include receiving machine terminal information, processing the received machine terminal information utilizing a sensorless control algorithm, and determining motor speed data based on the processed information. The step of modulating the inverter switching frequency may include determining a modified inverter switching frequency value based on the determined motor speed range and providing the modified inverter switching frequency value to a processor control algorithm. In one embodiment, the processor control algorithm modifies the inverter switching frequency based on the modified inverter switching frequency value.